PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number
18602-08204

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]

on _____

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Typed or printed name _____

Application Number	Filed
10/655,564	September 3, 2003

First Named Inventor	
Adriana Dumitras	
Art Unit	**Examiner**
2621	Christopher Findley

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.

☒ attorney or agent of record.
Registration number 57,219.

☐ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

/Brian G. Brannon/
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August 4, 2008
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

REMARKS FOR PRE-APPEAL BRIEF REQUEST FOR REVIEW IN U.S. PATENT APPLICATION NO. 10/655,564 FILED ON SEPTEMBER 3, 2003

Pre-appeal brief review is appropriate in this application because the rejections in the Final Office Action dated May 2, 2008 contain clear deficiencies. The cited references fail to include any teaching or suggestion of essential claim elements, therefore they cannot form the basis for a *prima facie* rejection. Thus, the rejections of claims 1-18 should be withdrawn.

REJECTION OF CLAIMS 1-18 UNDER 35 USC § 103

Claims 1-18 have been rejected under 35 USC § 103(a) as unpatentable over PCT Application No. US97/08266 to Chang et al. ("Chang") in view of U.S. Patent No. 6,670,963 to Osberger ("Osberger").

Claim 1 recites, in part, "identifying at least two largest regions in each frame having substantially similar motion angles" and "determining percentages of each frame covered by the at least two largest regions." By identifying the two largest regions of each frame having a substantially similar motion vector orientation, the claimed method detects a pan or a zoom without computing global motion parameters, i.e., computing motion where most of the image points are uniformly displaced.

In contrast, Chang merely discloses detecting moving objects within a frame by identifying areas of a frame having motion vectors different than other, non-moving, areas of the frame (Chang, page 17, lines 4-6). This detection compares motion vectors to a predetermined threshold value and eliminates areas of the frame having motion vector values below the predetermined threshold value (Chang, page 17, line 8). Chang then identifies moving and non-moving regions of theframe using a linear transformation and a translation rather than identifying "at least two largest regions in each frame having motion vectors with

substantially similar motion angles," as required by claim 1. Further, as Chang does not identify "at least two largest regions in each frame having motion vectors with substantially similar motion angles," Chang cannot determine "percentages of each frame covered by the at least two largest regions," as recited in claim 1. Because Chang detects all regions in a frame having motion vectors exceeding the largest threshold value, there is no determination of the "percentages of each frame covered by the at least two largest regions." Additionally, the Examiner has admitted that Chang does not explicitly disclose determining percentages of each frame covered by the at least two largest regions. *See* Final Office Action dated May 2, 2008, page 4.

Osberger fails to remedy the deficient disclosure of Chang. Rather, Osberger discloses a segmentation algorithm that divides a video frame into a plurality of regions based on color and luminance (Osberger, Abstract). The disclosed segmentation algorithm also processes a current frame and a previous frame to produce motion vectors describing the current frame (Osberger, 2:33-37). However, Osberger examines motion vectors associated with the entirety of the current frame and the entirety of the previous frame to generate an importance map for the current frame (Osberger, 3:23-30). There is no disclosure or suggestion in Osberger of "identifying at least two largest regions in each frame having substantially similar motion angles" or "determining percentages of each frame covered by the at least two largest regions," as claimed. Osberger merely estimates motion in a scene by taking the m^{th} percentile, such as the 98^{th} percentile, of the camera motion compensated motion vector map (Osberger, 7:61-64). This motion estimation does not identify "at least two largest regions in each frame having substantially similar motion angles" or determine "percentages of each frame covered by the at least two largest regions," but merely specifies

that a portion of the motion vectors in a complete frame are discounted during analysis. For example, the disclosed motion estimation in Osberger examines 98% of the motion vectors included in a complete frame to determine the amount of motion and disregards the remaining 2% of the motion vectors in the complete frame. Osberger evaluates motion vectors from the frame as a whole, not from different regions within the frame. As the motion analysis disclosed in Osberger examines individual frames in their entirety and does not identify "at least two largest regions in each frame having substantially similar motion angles" or determine "percentages of each frame covered by the at least two largest regions," as claimed.

While Osberger processes motion vectors for a current frame and for a previous frame to produce motion vectors for the current frame, the claimed invention identifies two largest regions within the same frame in a video sequence having substantially similar motion angles and computes the percentage of the frame covered by each of the identified largest regions. Further, Osberger discloses "taking the m^{th} percentile, such as the 98^{th} percentile, of the camera motion compensated motion vector map" to estimate the amount of motion in a scene (Osberger, col. 7, lines 58-64). This disclosed motion vector map describes motion in a complete frame and is used to identify areas in a scene where the viewer is likely to focus (Osberger, col. 8, lines 10-34). Nothing in Osberger indicates that this computation identifies "at least two largest regions in each frame having substantially similar motion angles" or determines the percentage of a frame covered by the two largest regions of the frame having motion vectors with substantially similar motion angles. Rather, Osberger identifies the total amount of object motion in a scene, regardless of where the motion occurs within the frame. Merely analyzing a specified percentile of a motion vector

map does not determine the percentages of a frame covered by the largest regions in the frame having motion vectors with substantially similar motion angles, but analyzes a subset of the motion vectors included in a complete frame.

In describing the rejection based on Chang and Osberger, the Examiner references Osberger to show the amount of motion activity in a histogram for frames having moving or non-moving backgrounds. *See* Final Office Action dated May 2, 2008, pages 2-3. However, Osberger does not disclose generating or analyzing a histogram, but discloses analyzing a specified percentile of motion vectors to determine the amount of motion in a scene. A percentage of the motion vectors within a scene in its entirety is evaluated in Osberger, and the similarity of motion angles is not analyzed to identify "at least two largest regions in each frame having substantially similar motion angles." There is no disclosure or suggestion in Osberger that similarity of motion angles is used to determine the percentage of motion vectors analyzed. Hence, this analysis of a specific percentile of the motion vectors in a total scene also does not identify the largest regions of a frame having substantially similar motion vectors, but merely analyzes a percentage of the motion vectors for an entire frame. Only the total amount of motion in a scene is identified by Osberger rather than the "percentages of each frame covered by the at least two largest regions" having substnatially similar motion vectors, as claimed. Further, while a frame having a moving background would have different motion vectors, this difference in motion vectors does not determine "percentages of each frame covered by the at least two largest regions" having substantially similar motion vectors.

Thus, neither of the cited references, taken alone or in combination, teaches the claimed invention, and claim 1 is patentable over those references.

Claims 7 and 13 similarly recite identifying "at least two largest regions in each frame having substantially similar motion angles" and determining "percentages of each frame covered by the at least two largest regions." Therefore, claims 7 and 13 are patentable over the cited references, both alone and in combination, for at least the same reasons discussed above with respect to claim 1.

In addition to reciting their own patentable features, claims 2-6, 8-12 and 14-18 variously depend from patentable base claims 1, 7 and 13. Accordingly each of dependent claims 2-6, 8-12 and 14-18 are also patentable.

Respectfully Submitted,
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